

U.S. Patent Application Serial No. 09/941,984

Response filed September 12, 2005

Reply to OA dated August 23, 2005

CLAIMS:

Claims 1-3 (canceled)

Claim 4. An endoscope comprising:

an elongated inserted section;

an illuminating light projecting means projecting an illuminating light from the distal end side of said inserted section;

an objective optical system arranged on the distal end side of said inserted section, having at least two optical systems receiving the light from an object illuminated by said illuminating light and forming at least two images not equal to each other; and

one image transmitting optical system having single optical axis and being formed to be of a size equal to or larger in the radial direction than a size of said objective optical system, and arranged within said inserted section and transmitting said two images in common,

wherein said objective optical system has said two optical systems arranged in parallel on an object side and one optical system arranged in common on the image side of said two optical systems and said two optical systems are formed of negative lenses.

Claims 5-18 (canceled)

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Claim 19. A stereoendoscope comprising:

an elongate inserted section;

an illuminating light projecting means projecting an illuminating light from the distal end side of said inserted section;

an objective optical system arranged on the distal end side of said inserted section and forming n images (wherein n is an integer equal to or above 3) having a parallax between each other for the object illuminated by said illuminating light;

one transmitting optical system transmitting the n images;

at least one image taking means taking the respective images simultaneously; and

a displaying means selectively displaying any two images of the taken plural images.

Claims 20-59 (canceled)

Claim 60. A stereoendoscope comprising:

an elongate inserted section;

an illuminating light projecting means projecting an illuminating light from the distal end side of the inserted section;

an objective optical system arranged on the distal end side of said inserted section and forming plural images having a parallax between each other respectively in spatially separated positions for the object illuminated by said illuminating light;

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one image transmitting optical system transmitting said plural images; and  
an adapter optical system for re-forming the plural images having parallax,  
wherein the optical axis of said adapter optical system is inclined to an optical axis of said  
image transmitting optical system.

Claim 61 (canceled)

Claim 62. A stereoendoscope comprising:  
an elongate inserted section;  
an illuminating light projecting means projecting an illuminating light from the distal end  
side of said inserted section;  
an objective optical system wherein plural optical systems are arranged in parallel on the  
distal end side of said inserted section and plural images having a parallax between each other  
are formed in spatially separated positions the object illuminated by said illuminating light;  
an image transmitting optical system comprising one optical system transmitting the plural  
images formed by the objective optical system; and  
an image taking means taking at least two images of the plural images transmitted by said  
image transmitting optical system,  
wherein said image taking means comprises two image taking devices whose optical axes  
are inclined respectively to the optical axis of said image transmitting optical system.

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Claim 63. A stereoendoscope comprising:

an elongate inserted section;

an illuminating light projecting means projecting an illuminating light from the distal end

side of said inserted section;

an objective optical system wherein plural optical systems are arranged in parallel on the distal end side of said inserted section and plural images having a parallax between each other are formed for the object illuminated by said illuminating light;

an image transmitting optical system comprising one optical system transmitting the plural images formed by the objective optical system; and

an image taking means taking at least two images of the plural images transmitted by said image transmitting optical system,

wherein said image taking means comprises plural image taking devices and central parts on image taking surfaces of said plural image taking devices are arranged as inclined to contact curved surfaces of the images.

Claims 64-70 (canceled)

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Claim 71. A stereoendoscope comprising:

an elongate inserted section;

an illuminating light projecting means projecting an illuminating light from the distal end side of said inserted section;

an objective optical system arranged on the distal end side of said inserted section and forming n images (wherein n is an integer equal to or above 3) having a parallax between each other for the object illuminated by said illuminated light, said n images are not superimposed on each other;

one image transmitting optical system transmitting the n images;

at least one image taking means taking the respective images;

and a displaying means selectively displaying any two images of the taken plural images.